Accurate
TECHNOLOGY INC.
*Linear Digital Measuring Systems*

# Digi Fence®


## User Manual for:

# Digi Fence (All Models)

***Readout Firmware version d 2.000 & Higher***

# Warranty

Accurate Technology, Inc., warrants this product against defective parts and workmanship for 1 year commencing from the date of original purchase. Upon notification of a defect, Accurate Technology, Inc., shall have the option to repair or replace any defective part. Such services shall be the customer's sole and exclusive remedy. Expenses incidental to repair, maintenance, or replacement under warranty, including those for labor and material, shall be borne by Accurate Technology, Inc. (Including freight or transportation charges during the first 30 days).

Except as expressly provided in this warranty, Accurate Technology, Inc., does not make any warranties with respect to the product, either expressed or implied, including implied warranties of merchantability or fitness for a particular purpose, except as expressly provided in this agreement.

Accurate Technology, Inc., shall not be liable for any special, incidental, or consequential damages or for loss, damage or expense directly or indirectly arising from the customer's use of or inability to use the equipment either separately or in combination with other equipment, or for personal injury or loss or destruction of other property, or from any other cause.

To request repair work (either warranty qualified parts or not), contact Accurate Technology, Inc. directly by phone, fax, or e-mail. A Returned Merchandise Authorization (RMA) number is required before returning a product for repair.

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***SAFETY WARNING***

**Before installing Digi Fence on any machinery:**
**Turn off the machine and disconnect the power.**

***SAFETY WARNING***

P/N 800-1100-001 Rev. F

# Table of Contents

# SECTION 1 GENERAL INFORMATION

## Introduction

This is a custom engineered system that adds a digital readout to your existing commercial style Table Saw fence. This kit is supplied with an Digi-Scale measuring system, and all the components needed for a quick and easy retrofit to your existing fence. The readout has easy-to-use front panel keys for calibration, incremental measurements, and changing of measurement units. User selectable resolution will display fractions in 16ths, 32nds, or 64ths; inches as .01 or .001, and millimeters as .1 or .01. The system is powered by two AA alkaline batteries. It is immune to dirt, sawdust or other non-conductive contaminants making it the ideal choice for shops and other dusty environments.

## What This Manual Includes

This manual includes information for the following Digi Fence Systems:

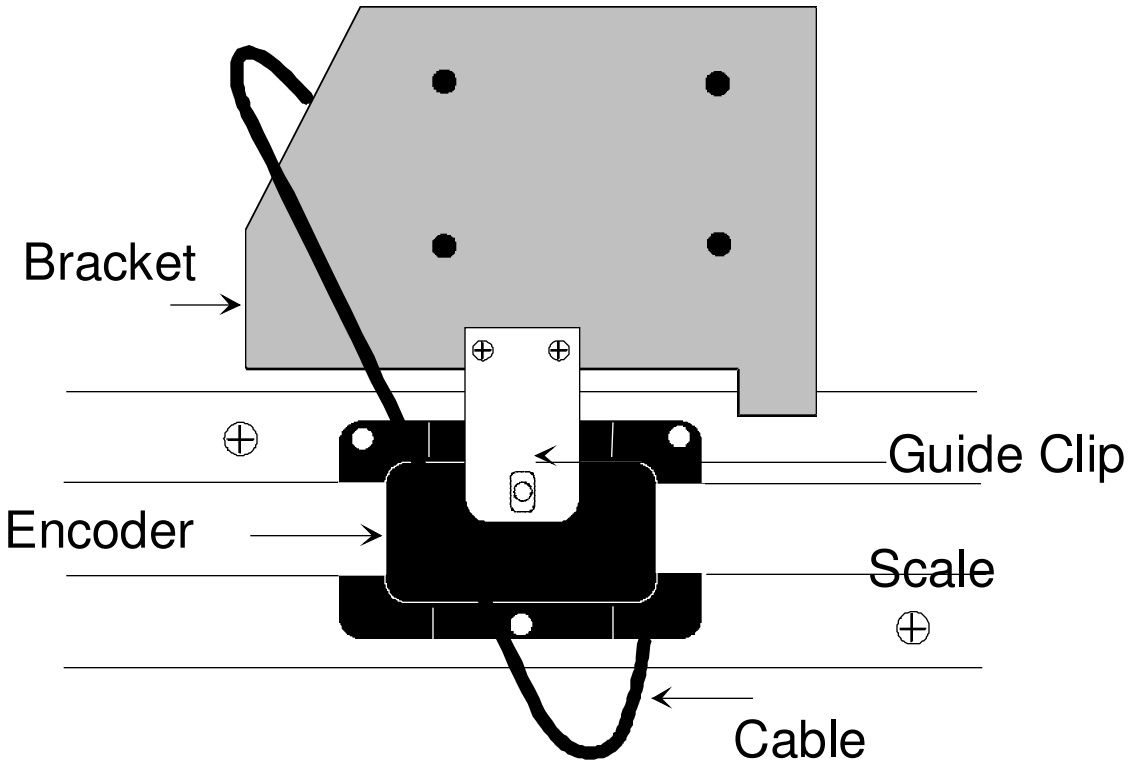
| | |
|---|---|
| Biesemeyer & General | Part Number: 903-1000-001 |
| SawStop & Steel City | Part Number: 903-1007-001 |
| Delta Unifence | Part Number: 903-1004-001 |
| XACTA II / Powermatic | Part Number: 903-1001-001 |
| XACTA II / HTC | Part Number: 903-1013-001 |
| Safety Speed Cut QuickStop | Part Number: 903-7001-001 |
| Felder K700 Series | Part Number: 903-7002-001 |

## Digi Fence Specifications

| | |
|---|---|
| Measuring Range | 60 inches |
| Accuracy: | ± .01inch |
| Resolution | .1in/.1mm. or 01in/.1mm or .001in/.01mm or 1/16, 1/32, 1/64 |
| Repeatability: | .01inch or .1mm |
| Readout Range: | ± 999.999 in; ± 399 63/64 in; ± 9999.99 mm |
| Operating Temp: | 32 to 120°F |
| Max. Slew Rate: | 15 inches/sec. (400 mm/sec.) |
| Encoder: | 24 inch six-conductor cable terminated by RJ11 connector. |
| Dimensions: | Available at on request. |
| Warranty: | One year from date of purchase. |

# SECTION 2 INSTALLATION

Digi Fence is designed so that the aluminum Scale can be mounted on the saw fence rail and the Encoder can be attached to the moving part of the fence. A guide clip connects the Encoder to the fence so the two move together. Figure 1 shows a typical installation.




Underside View

**NOTE: Follow the *Installation Instructions* you received with your kit for proper installation on your fence model.**

## Calibration

There are two ways to set a zero reference (calibration).

Quick Method: Move the fence until it just touches the blade and depress the Zero key on the front of the digital readout.
Best Method: Cut a small piece of material. Measure the size with a caliper, and use the **+** and **-** keys on the front of the readout to set in the correct reading.

When the correct reading is set, lock the Readout if desired. This prevents accidentally re-zeroing of the readout. See Section *3* for more information about how to lock the readout.

## Maintenance

The Digital Readout should be cleaned periodically with compressed air to remove any dust on the lens and keys. All fasteners should occasionally be checked for tightness.

Do not use any liquid lubricants on the scale assembly, as this may impede the Encoder's ability to operate properly and attract other contaminants to the scale.

## Readout Keys


### Timing

The keys pictured above have multiple functions. Timing, that is how long a key is depressed, and the combination of the keys pressed, is important. This manual uses the term '"*momentarily*" to describe a key press of typically less than 1 second. Whereas *"press and hold*" is used imply a key press of typically longer than 1.5 seconds. As an example; when using a PC keyboard to type a capital letter you would "*press and hold*" the SHIFT key and "*momentarily"* depress the LETTER key.
In addition, keep in mind the key's "*function*" is executed on the key RELEASE, not the key DEPRESS. This is important since some keys execute different functions based on how long they are depressed. These key operations, once tried, quickly become intuitive.

### On/Off

Momentarily pressing the **ON/OFF** key will cause the Readout to turn on or off. The Firmware Version is displayed on power-up when **ON/OFF** key is pressed. While on, if no key presses or positional changes occur within 15 minutes, the Digital Readout will automatically turn itself off to conserve battery life. While off, if a position change is detected (.05mm or .002in) or the **ON/OFF** button is pressed, the Readout will automatically turn itself on with no loss of measurement information.

### Mode

The Digital Readout can display measurement information in decimal inches, fractions, or millimeters. To change the current display mode, momentarily press the **MODE** key. With each key press the Readout will cycle through decimal inches, fractional inches and millimeters.

When the Readout is in 1/16 or 1/32 inch fraction mode, a series of "bars" in the upper right corner of the LCD each represent an additional 1/64th of an inch measurement. ie. When in 1/16 inch mode and three bars are showing, the measurement displayed is rounded down to closest 1/16 inch and each illuminated bar indicates an additional 1/64 of an inch ("heavy") measurement. For better resolution switch to 1/32 or 1/64 fraction mode. For the best resolution switch to a decimal mode. (Inch or mm).


When the measurement is greater than 99 63/64 inches, a +100 and/or +200 will illuminate in the upper right portion of the display to indicate this amount must be added to the displayed reading. ie: If the measurement is 151 39/64 inches, 51 39/64 and +100 will be illuminated on the display. See photo below.


## +, 0, and – Keys

The **+** (plus), **0** (zero) and **–** (minus) keys are used to change the currently displayed position to a different value. The **0** key forces the unit to display 0. Momentarily depressing the **+** key increments the current position by one unit of measurement. Momentarily depressing the **–** key decrements the current position by one unit. Pressing and holding the **+** or **–** keys will cause the displayed position to change continuously. Holding down the key will cause the amount of change to speed up. This allows for quick adjustments over a range of large values.

NOTE: While the **0** (zero) key can be used to simply "zero" the currently displayed value, it can also be programmed to force the display to a preset value. This can be zero, or any other displayable value.
*See Programming Parameter Pr1*

## Display Resolution

The Digital Readout can be configured to display measurements with different resolution.
In Normal display mode the resolution is: .01in or .01mm.
In Higher display mode the resolution is: .001in or .01mm
In Lower display mode the resolution is: .1in or .1mm.
Fractions remain the same for all settings: 1/16, 1/32 & 1/64
*See Programming Parameter Pr4*

## Incremental Measurements

To make Incremental measurements, press and hold MODE key for approximately 3 seconds. This switches the Readout to **INC**remental mode (as shown in the upper left corner of the LCD). You can now press the ZERO, + or – keys if desired. Any measurement taken will be an incremental measurement and you will not lose your original **ABS**olute position. While in the Incremental measurement mode, the Readout can be re-zeroed for repeated incremental measurements by pressing the ZERO key. To recall + and - offsets in Incremental measurement mode, simply press the MODE key for repeated incremental measurements. Measurement units (in, mm, fraction) changes are not allowed while in INC mode. To return to the ABS measuring mode, press the MODE key for 3 seconds.

## Lock Mode

The user can "lock-out" the position offset adjustment functions **(+, -, 0** keys) to prevent accidental changes of the current displayed position. To activate the lock mode, press and hold the **ON/OFF** key and then momentarily press the **MODE** key. The word **LOCK** will appear in the upper left corner of the LCD, and the **+, -** and **0** keys will not change the displayed position.

For a more permanent keypad lock solution, *See Programming Parameter Pr3*

## Reverse Scaling

If you set a zero point on ProScale, moving the scale in one direction will produce positive readings. Moving the scale past zero in the opposite direction will produce negative readings. Reverse scaling means changing the orientation of the Encoder so that positive readings become negative and negative readings become positive. There are two methods to reverse readings:

1. Slide the Encoder off the scale and re-install the Encoder in the opposite direction, being careful not to damage the ground fingers inside the Encoder.
2. Change *Programming Parameter Pr2*

## Changing the Batteries

A **"BAT"** indicator will appear in the upper left corner of the LCD display when new batteries are needed.

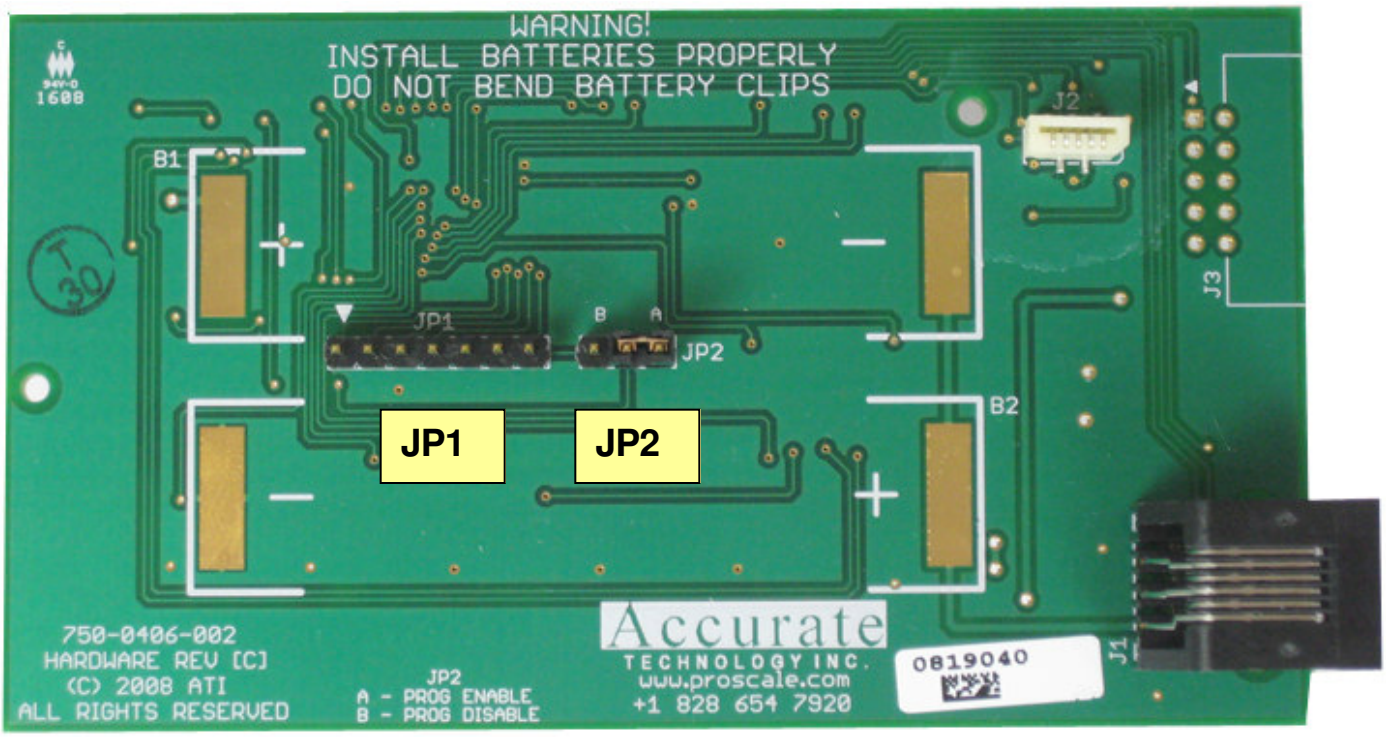
Remove the screws in the upper right and lower left corners. Pull the cover off. Remove the old batteries. Reinstall new AA Alkaline batteries, noting the proper orientation. Replace the cover and tighten the screws.

**CAUTION: DO NOT BEND BATTERY CLIPS!**

THESE CLIPS ARE DESIGNED TO BE LOOSE WHEN THE CASE IS OPEN AND WILL COMPRESS AND SECURE THE BATTERIES IN PLACE WHEN THE CASE HALVES ARE SCREWED TOGETHER.

# Jumpers

User configurable jumpers consist of three pins and a ‘shorting block’.
The center of these pins is ‘Common’. One end pin is labeled ‘A’ and the other end pin is labeled ‘B’.




**JP1** **FACTORY USE ONLY**

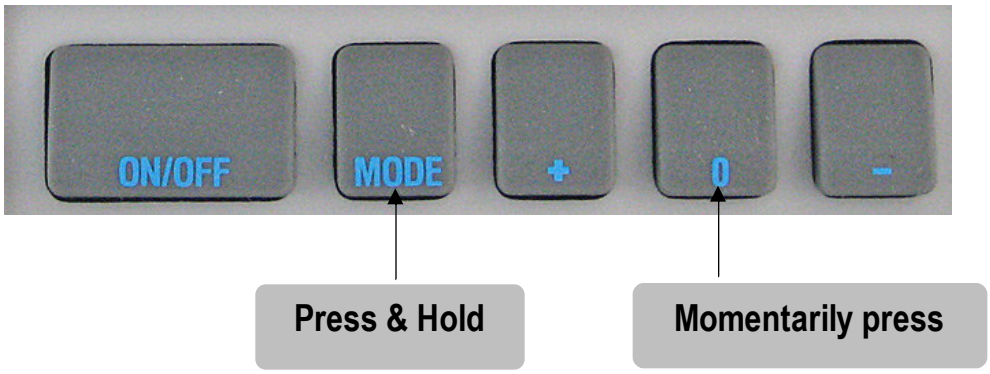
**JP2** **Programming Lockout**
When jumper is in Position **A**, Front Panel Programming is **ENABLED**
When jumper is in Position **B**, Front Panel Programming is **DISABLED**

# Programming

Several functions of this Digital Readout are user programmable. The following describes how to change the factory defaults to customize your Digital Readout.

**To enter Programming Mode:**

1. Press and hold the **MODE** key then momentarily press the **0** key.
2. The LCD will briefly display: **pg on** (Programming On), then **Pr 1**, (indicating Programming Parameter #1).
3. Release the **MODE** key.
4. The value stored for ***Pr1*** is displayed.




**Once in the Programming Mode:**

Moving up parameter list - Momentarily press the **MODE** key to advance through the Programming Parameter list, first displaying the Programming Parameter number then the currently programmed value.

Moving down parameter list - Press and hold the **ON/OFF** key and momentarily press the **MODE** key to move backward through the Programming Parameter list.

Increase parameter value - Momentarily press the **PLUS (+)** key while displaying a Programming Parameter Value to increase the parameter setting.

Decrease parameter value - Momentarily press the **MINUS (-)** key while displaying a Programming Parameter Value to decrease the parameter setting.

Reset parameter value to default setting - Momentarily press the **ZERO (0)** key while displaying a Programming Parameter Value to reset it to the factory default value.

Exit programming mode - Press and hold the **MODE** key. Momentarily depress the **0** key. The LCD will briefly display: **pg oFF** (Programming Off), and will then return to normal operation. **NOTE**: The system will automatically exit programming mode after 60 seconds of no key activity.

# Programming Parameters

Programming Parameters are listed below. Values in **[ ]** are the available range of values that can be programmed for that parameter.
Factory defaults are shown in **Bold Red**.

**Pr 1: 0 Key Value** **[0** to ± 999.999in**]** or **[0** to ±9999.99mm**]**
The programmed value that will be recalled whenever the **0** (zero) key is pressed during normal operation.
**Default = 0**

**Pr 2: Reverse Scaling** **[0** or 1**]**
This parameter controls the sign of travel (positive vs negative) when the measuring system is moved.
**Default = 0**

**Pr 3: Key Lockout** **[0** or 1**]**
This parameter controls the operation of the +, - and 0 keys. If enabled (set to 1), these keys will not function and the word **LOCK** will appear on the display. This prevents accidental changes when depressing these keys during normal operation.
**Default = 0**

**Pr 4: Display Resolution** **[**1, **2** or 3**]**
This parameter sets the number of places to the right of the decimal point on the display when the Digi Readout is in a decimal mode (in or mm).
A value of **1** will display x.x.
A value of **2** will display x.xx
A value of **3** will display x.xxx
**Default = 2**
NOTES:
Decimal inches have a maximum of 3 places.
Millimeters have a maximum of 2 places (even if parameter is set to 3.)
This setting has no effect when displaying fractions.

# Frequently Asked Questions

***What F/W (Firmware) version do I have?***

The display will show *d 2.xxx* on power up. This is the firmware version of your Readout.

***What does "no Enc" mean?***

If the Encoder cable is unplugged from the Readout, **no Enc** will appear on the display. To clear: Be sure the Encoder is on the scale and plugged into the readout

***The keys don't seem to do what they are supposed to do.***

Timing, that is how long a key is depressed, and the combination of the keys pressed is important. This manual uses the term '"*momentarily*" to describe a key press of typically less than 1 second. Whereas *"press and hold*" is used imply a key press of typically longer than 1.5 seconds. As an example; when using a PC keyboard to type a capital letter you would "*press and hold*" the SHIFT key and "*momentarily"* depress the LETTER key.
In addition, keep in mind the key's "*function*" is executed on the key RELEASE, not the key DEPRESS. This is important since some keys execute different functions based on how long they are depressed.

***The battery clips seem to be very loose. Is this normal?***

**Yes. DO NOT** attempt to bend these clips or wedge anything between them and the case. These clips are designed to expand when the two case halves are screwed together.

***The readings are "backwards"?***

You can change the "scaling" direction of the system by:
1. Reversing the orientation of the Encoder on the Scale.
2. Changing the value of *Programming Parameter Pr 2*.

# Thank you for choosing an Accurate Technology Product

*Please register your system at:*
*http://www.proscale.com/registration.htm*

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